INCH-POUND

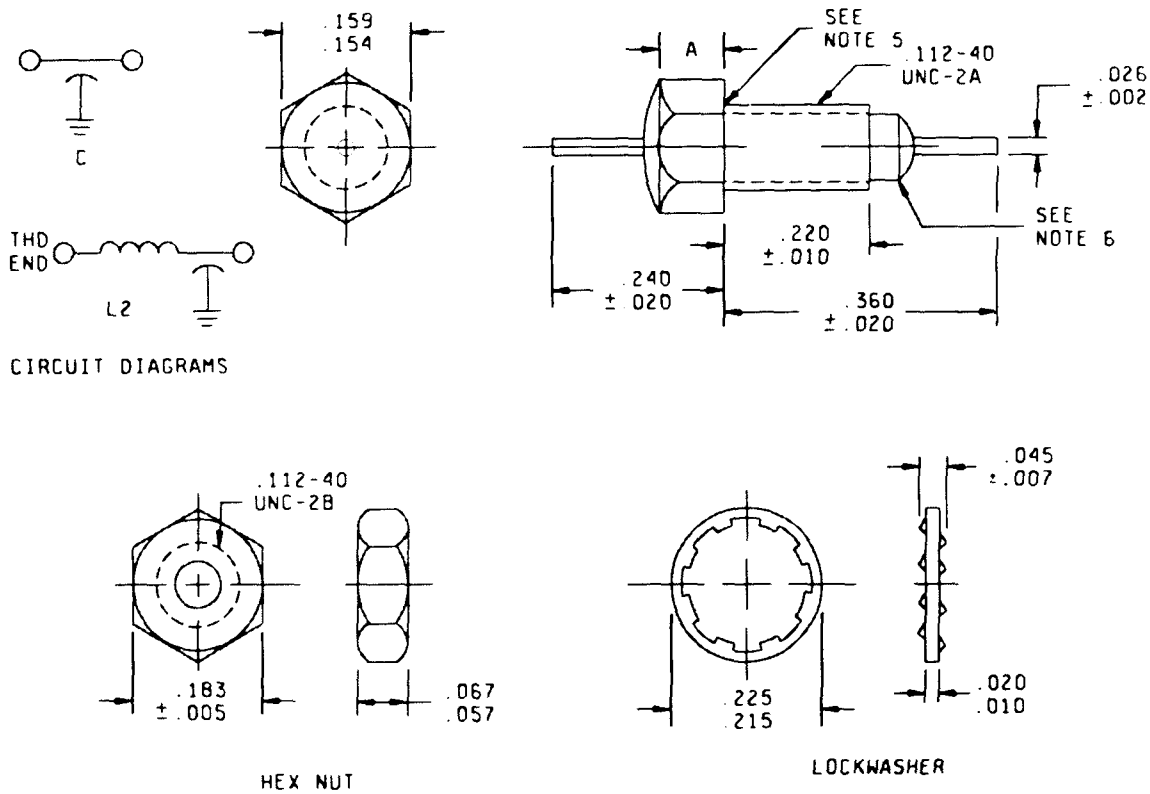
MIL-PRF-28861/6D
30 April 1996
SUPERSEDING
MIL-F-28861/6C
23 August 1993

PERFORMANCE SPECIFICATION SHEET

FILTERS AND CAPACITORS, RADIO FREQUENCY/ELECTROMAGNETIC INTERFERENCE SUPPRESSION, NONHERMETICALLY SEALED, STYLE FS60

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-PRF-28861.



(D) denotes changes

FIGURE 1. Case and hardware dimensions and circuit diagrams.

Dash number	A dimension
003	.145 ±.030
001, 002, 004 thru 007	.120 ±.005

Inches	mm	Inches	mm
.002	0.05	.112	2.84
.005	0.13	.120	3.05
.007	0.18	.145	3.68
.010	0.25	.154	3.91
.020	0.51	.159	4.04
.026	0.66	.183	4.65
.030	0.76	.215	5.46
.045	1.14	.220	5.59
.057	1.45	.225	5.72
.067	1.70	.240	6.10
		.360	9.14

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Circuit diagrams are for information only.
4. All filters shall be supplied with mounting hardware (hex nut and lockwasher). Mounting hardware shall be furnished with the same finish as the filter case.
5. One and one-half imperfect threads allowed, .030 inch (0.76 mm) maximum.
6. One imperfect thread allowed .030 inch (0.76 mm) maximum.
7. Recommended mounting torque: 32 oz-in ±4 oz-in.
8. Potting shall not extend beyond .030 inch (0.76 mm) from the filter body.

FIGURE 1. Case and hardware dimensions and circuit diagrams - Continued.

REQUIREMENTS:

Design and construction:

Dimensions and configuration: See figure 1.

Weight: 1 gram maximum.

Case: Steel, UNS 10100 or 10180 in accordance with ASTM A108.

Case finish: T, S, or G in accordance with MIL-PRF-28861.

Terminals: Solderable.

Operating temperature range: -55°C to +125°C.

Rated voltage: See table I.

Rated current: 5 amperes maximum.

Capacitance to ground: See table I for capacitance value.

Dissipation factor: 3 percent maximum.

Voltage and temperature limits of capacitance: +15 percent, -40 percent.

Insulation resistance:

At +25°C: 1,000 megohm-microfarads or 100,000 megohms minimum, whichever is less.

At +125°C: 100 megohm-microfarads or 10,000 megohms minimum, whichever is less.

Insertion loss:

At +25°C: In accordance with table I.

At -55°C and +125°C: A 3 dB degradation from the +25°C value shall be allowed.

Voltage drop: 0.1 volt maximum.

DC resistance: 0.02 ohm maximum.

Seal: Not applicable.

Temperature rise: +25°C maximum.

Thermal shock and immersion: Not applicable.

Moisture resistance: Not applicable.

Solderability of terminals: In accordance with MIL-PRF-28861.

Quality assurance provisions: In accordance with MIL-PRF-28861.

Product assurance level: See table I.

(D) TABLE I. Electrical characteristics.

Dash number	Circuit	Product assurance level		Rated voltage volts dc	Capacitance (μF) -0, +100 percent	Minimum insertion loss (dB) in accordance with MIL-STD-220. 1/ 2/						Minimum insertion loss at resonant frequency. 3/
		Class B	Class S			1 Mhz	10 Mhz	100 Mhz	200 Mhz	1 Ghz	10 Ghz	
001	C	X	X	100	.027	10	30	39	43	65	70	40 dB 200MHz - 1GHz
002	L2	X	X	100	.027	10	30	50	45	70	70	---
003	L2	X	--	100	.045	14	37	45	50	70	70	---
004	C	X	X	200	1,000 pF	--	4	20	25	30	55	---
005	C	X	X	200	5,000 pF	--	15	34	41	42	55	30 dB 200MHz - 1GHz
006	C	X	--	200	.01	4	21	35	42	50	70	35 dB 200MHz - 1GHz
007	L2	X	--	200	.01	4	21	35	44	50	70	

1/ For C circuits, insertion loss measurements shall be made under no load. For L2 circuits, insertion loss measurements shall be made under full load over the frequency range of 1 Mhz to 10 Mhz; above this frequency range, insertion loss measurements shall be made under no load.

2/ Except as specified in 3/, the insertion loss requirements between any two adjacent specified frequencies shall be that of the lower of the two frequencies in order to accomodate resonant dips.

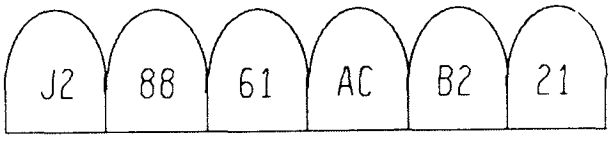
3/ The frequency range in which the resonant frequency dip will occur and the minimum insertion loss at the resonant frequency.

Part or Identifying Number (PIN): The PIN shall be as follows:

M28861/06 - XXX X X

- XXX: Dash no. in accordance with figure 1 and table I
- X: Case finish
- X: Product assurance level in accordance with MIL-PRF-28861 and table I

Marking: Filters shall be marked, as a minimum, with an abbreviated military PIN as shown on figure 2. Full marking, in accordance with MIL-PRF-28861, shall be marked on the unit package.



J - Abbreviation for JAN
28861 - Abbreviation for M28861
A - Indicates specification sheet 06
C - Code indicating dash no. as follows:

Code	Dash no.	Code	Dash no.
A	001	E	005
B	002	F	006
C	003	G	007
D	004		

B - Code indicating product assurance level (for example, B indicates class B).
221 - Date code. First digit indicates the year (for example, 2 indicates 1992). The last two digits indicate the week.

FIGURE 2. Example of marking for the abbreviated military PIN on the hex flats-expanded view.

Application note: These nonhermetically sealed filters may be susceptible to moisture intrusion when subjected to repeated thermal cycling. If these items are to be utilized in applications enduring harsh environments, the user should consider placing them within hermetic enclosures.

Cataloging information: Dash numbers 001 and 004 through 006 shall be cataloged under FSC 5910 as feed-through ceramic capacitors. Dash numbers 002, 003, and 007 shall be cataloged under FSC 5915 as radio frequency interference filters.

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - EC
Air Force - 85
NASA - NA

Review activities:
Army - AR, AT, AV, ME, MI
Navy - AS, MC, OS, SH
Air Force - 19, 99

Preparing activity:
DLA - ES

(Project 59GP-0142)